

**INFORMATION DISCLOSURE CITATION**  
(Use several sheets if necessary)

Docket Number (Optional)  
**02-076 C1**

Application Number  
**Unassigned**

Applicant(s)  
**Lucien Alfred Couvillon Jr.**

Filing Date  
**Filed Herewith**

Group Art Unit  
**Unassigned**

**U.S. PATENT DOCUMENTS**

*EXAMINER INITIAL	REF	DOCUMENT NUMBER	DATE	NAME	CLASS	SUBCLASS	FILING DATE (IF APPROPRIATE)
A.R.	1	4,273,111	6/16/81	Tsukaya	128	6	
	2	4,286,585	9/1/81	Ogawa	128	6	
	3	4,499,895	2/29/85	Takayama	128	6	
	4	4,503,842	3/12/85	Takayama	128	4	
	5	4,543,090	9/24/85	McCoy	604	95	
	6	4,601,705	7/22/86	McCoy	604	95	
	7	4,753,223	6/28/88	Bremer	128	4	
	8	4,790,624	12/13/88	Van Hoya et al.	350	96.26	
	9	4,846,573	7/11/89	Taylor et al.	356	241	
	10	4,884,557	12/5/89	Takehana et al.	128	4	
A.R.	11	4,899,731	2/13/90	Takayama et al.	128	4	

**FOREIGN PATENT DOCUMENTS**

	REF	DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUBCLASS	Translation	
							YES	NO
AR	1	WO 01/58973 A2	8/16/01	PCT	C08G		✓	
	2	JP3004830	1/10/91	Japan	A61B1	00	✓	
	3	JP3170125	7/23/91	Japan	A61B1	00	✓	
	4	JP8066351	3/12/96	Japan	A61B1	00	✓	
AR	5	JP8322783	12/10/96	Japan	A61B1	00	✓	

**OTHER DOCUMENTS** (Including Author, Title, Date, Pertinent Pages, Etc.)

AR	1	Jae-Do Nam, "Electroactive Polymer (EAP) Actuators and Devices for Micro-Robot Systems" 28 November 2000.
AR	2	"Snake-like Robot Endoscopes", from <a href="http://robby.caltech.edu/~chen/res-medical.html">http://robby.caltech.edu/~chen/res-medical.html</a> , page updated 14 August 1996.

EXAMINER *Arzon Band*

DATE CONSIDERED *8/9/2004*

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## U.S. PATENT DOCUMENTS

EXAMINER INITIAL		DOCUMENT NUMBER	DATE	NAME	CLASS	SUBCLASS	FILING DATE IF APPROPRIATE
AR	12	4,930,494	6/5/90	Takehana et al.	128	4	
	13	4,977,886	12/18/90	Takehana et al.	128	4	
	14	4,987,314	1/22/91	Gotanda et al.	250	551	
	15	5,188,111	2/23/93	Yates et al.	128	657	
	16	5,268,082	12/7/93	Oguro et al.	204	282	
	17	5,337,732	8/16/94	Grundfest et al.	128	4	
	18	5,396,879	3/14/95	Wilk et al.	128	4	
	19	5,431,645	7/11/95	Smith et al.	606	1	
	20	5,482,029	1/9/96	Sekiguchi et al.	600	109	
	21	5,492,131	2/20/96	Galel	128	772	
AR	22	5,556,370	9/17/96	Maynard	600	151	

## FOREIGN PATENT DOCUMENTS

		DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUBCLASS	TRANSLATION	
							YES	NO
AR	6	JP10014863	1/20/98	Japan	A61B1	00	✓	
AR	7	ES 2 048 086	1/17/92	Spain	H01B1	12		✓
AR	8	ES 2 062 930	12/28/92	Spain	H01B1	12		✓

## OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, Etc.)

AR	3	Peirs et al., "Miniature Parallel Manipulators for Integration in a Self-propelling Endoscope," IUAP P4/24 IMechS Workshop, 27 October 1999.
AR	4	"Walking machines: 0-legged-robots," compiled by C. Duntgen, 26 August 2000.

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*Adrian B. B...*

DATE CONSIDERED

8/9/2004

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	FILING Filed Herewith	GROUP Unassigned

**U.S. PATENT DOCUMENTS**

EXAMINER INITIAL	DOCUMENT NUMBER	DATE	NAME	CLASS	SUBCLASS	FILING DATE IF APPROPRIATE
AR	23	5,624,380	4/29/97	Takayama et al.	600	146
	24	5,631,040	5/20/97	Takuchi et al.	427	100
	25	5,645,520	7/8/97	Nakamura et al.	600	151
	26	5,662,587	9/2/97	Grundfest et al.	600	114
	27	5,855,565	1/5/99	Bar-Cohen et al.	604	104
	28	5,857,962	1/12/99	Bracci et al.	600	105
	29	5,873,817	2/23/99	Kokish et al.	600	143
	30	5,916,146	6/29/99	Allota et al.	600	141
	31	6,162,171	12/19/00	Ng et al.	600	141
	32	5,090,956	2/25/92	McCoy	604	95
AR	33	5,906,591	5/25/99	Dario et al.	604	95

**FOREIGN PATENT DOCUMENTS**

DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUBCLASS	TRANSLATION	
					YES	NO

**OTHER DOCUMENTS** *(Including Author, Title, Date, Pertinent Pages, Etc.)*

AR	5	Yoseph Bar-Cohen, Ed., Electroactive Polymer (EAP) Actuators as Artificial Muscles, SPIE Press (2001), Chapter 1, pp. 3-44
AR	6	Yoseph Bar-Cohen, Ed., Electroactive Polymer (EAP) Actuators as Artificial Muscles, SPIE Press (2001), Chapter 7, pp. 193-221.

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EXAMINER INITIAL		DOCUMENT NUMBER	DATE	NAME	CLASS	SUBCLASS	FILING DATE IF APPROPRIATE
AR	34	6,249,076 B1	6/19/01	Madden et al.	310	363	
	35	5,250,167	10/5/93	Adolf et al.	204	299	
	36	5,389,222	2/14/95	Shahinpoor	204	299.2	
	37	5,556,700	9/17/96	Kaneto et al.	428	332	
	38	5,651,366	7/29/97	Liang et al.	128	662.06	
	39	5,771,902	6/30/98	Lee et al.	128	897	
	40	6,109,852	8/29/00	Shahinpoor et al.	414	1	
	41	5,535,759	7/16/96	Wilk	128	898	
	42	6,117,296	9/12/00	Thomson	204	607	
	43	5,368,015	11/29/94	Wilk	128	4	
AR	44	5,486,182	1/23/96	Nakao et al.	606	114	

**FOREIGN PATENT DOCUMENTS**

		DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUBCLASS	TRANSLATION	
							YES	NO

**OTHER DOCUMENTS** (Including Author, Title, Date, Pertinent Pages, Etc.)

AR	7	Jeon et al., Smart Structures and Materials 2001: Electroactive Polymer Actuators and Devices, Yoseph Bar-Cohen, Ed., Proceedings of SPIE Vol. 4329 (5-8 March 2001), pp. 380-388.
AR	8	Cho et al., Smart Structures and Materials 2001: Electroactive Polymer Actuators and Devices, Yoseph Bar-Cohen, Ed., Proceedings of SPIE Vol. 4329 (5-8 March 2001), pp. 466-474.

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Kubler et al., "An Endoscopic Navigation System," Proceedings of Medicine Meets Virtual Reality - MMVR 2001, pp. 253-255.

Kubler et al., "Endoscopic Robots," Proceedings of 3rd International Conference on Medical Image Computing and Computer-Assisted Intervention - MICCAI 2000, pp. 949-955.

Worldwide ElectroActive Polymers (Artificial Muscles) Newsletter, Vol. 3, No. 1 (June 2001).

"Smart Catheters," from <http://www.piaggio.ccii.unipi.it/cathe.htm>, printed 8/27/01

"Snake-like Flexible Micro-robot," from [http://www.agip.sciences.univ-metz.fr/~mihalach/Copernicus\\_project\\_engl.html](http://www.agip.sciences.univ-metz.fr/~mihalach/Copernicus_project_engl.html), Project start: 1 May 1995.

"Robot Snake with Flexible Real-Time Control," from <http://ais.gmd.de/BAR/snake.html>, last updated 01-10-17.

Jager et al., "Microfabricating Conjugated Polymer Actuators," Science, Vol. 290 (24 November 2000), pp. 1540-1545.

Electroactive Polymer (EAP) Actuators as Artificial Muscles, Yoseph Bar-Cohen, Ed., SPIE Press (2001), Chapter 16, pp. 457-495.

Electroactive Polymer (EAP) Actuators as Artificial Muscles, Yoseph Bar-Cohen, Ed., SPIE Press (2001), Chapter 21, pp. 615-659.

Yoseph Bar Cohen, Smart Structures and Materials 2001: Electroactive Polymer Actuators and Devices, Yoseph Bar-Cohen, Ed., Proceedings of SPIE Vol. 4329 (5-8 March 2001), pp. 1-6.

Madden et al., Smart Structures and Materials 2001: Electroactive Polymer Actuators and Devices, Yoseph Bar-Cohen, Ed., Proceedings of SPIE Vol. 4329 (5-8 March 2001), pp. 72-83.

Pelrine et al., Smart Structures and Materials 2001: Electroactive Polymer Actuators and Devices, Yoseph Bar-Cohen, Ed., Proceedings of SPIE Vol. 4329 (5-8 March 2001), pp. 335-349.

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21

John David Wyndham Madden, "Conducting Polymer Actuators," Massachusetts Institute of Technology, September 2000.

22

"Viking Optima," from <http://www.guidant.com/products/optima.shtml>, 2002 Guidant Corporation

23

Active Endoscope (ELASTOR, Shape Memory Alloy Robot), <http://mozu.mes.titech.ac.jp/research/medical/endoscope/endoscope.html>, 9 pages including 3 Figures and 4 photographs.

24

Koji Ikuta et al., "Shape Memory Alloy Servo Actuator System With Electric Resistance Feedback And Application For Active Endoscope," IEEE Int'l Conference on Robotics and Automation (Apr 24-29, 1988), pp. 427-430.

25

David L. Brock, "Review of Artificial Muscle based on Contractile Polymers," MIT Artificial Intelligence Laboratory, A.I. Memo No. 1330, November 1991, pages 1-12.

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Substitute for form 1449A/PTO		<i>Complete if Known</i>	
		Application Number	10/751,544
<b>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b>		Filing Date	01/05/2004
		First Named Inventor	Lucien Alfred Courvillon, Jr.
		Group Art Unit	3739
		Examiner Name	Unassigned
(use as many sheets as necessary)		Attorney Docket Number	02-276 C1
Sheet	2	of	2

OTHER PRIOR ART - NON PATENT LITERATURE DOCUMENTS			
Examiner Initials*	Cite No. 1	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	
AR	1	A. DELLA SANTA et al., "Intravascular Microcatheters Steered by Conducting Polymer Actuators," 18 <sup>th</sup> Annual International Conference of the IEEE Engineering in Medicine and Biology Society, Amsterdam 1996, pp. 2203-2204.	
AR	2.	ALBERTO MAZZOLDI et al., "Conductive Polymer Based Structures for a Steerable Catheter," <i>Smart Structures and Materials 2000: Electroactive Polymer Actuators and Devices</i> , Y. Bar-Cohen, ed., Proceedings of SPIE, Vol. 3987 (2000), pp. 273-280.	

Examiner Signature	<i>W. J. R. R. R.</i>	Date Considered	8/9/2004
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